



SALES & OPERATIONS PLANNING: COSTS AND BENEFITS

The Financial View of Implementing
Executive S&OP

by

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EXECUTIVE OVERVIEW

“How much does this S&OP stuff cost?” is a phrase heard more frequently these days. This white paper addresses that issue, first by discussing the benefits achieved by real-world companies and then by identifying the relevant costs involved in an implementation. The basis for this analysis is thirteen companies – all successful users of the S&OP process, from all over the world, and in a wide variety of industries.

Two kinds of benefits are shown: hard and soft. Hard benefits can be readily quantified; soft benefits cannot. Some of the sample companies indicate that the soft benefits they’ve received outweigh their considerable hard benefits.

Two sample Cost/Benefit Analyses are shown, one of which demonstrates that it can cost very little to implement Executive S&OP properly and that the returns are very high indeed. The other shows a much more costly implementation, but here also the returns are sizeable.

Last, a “straw man” analysis is presented by cutting the benefits in half and doubling the costs; here also the benefits are quite attractive.

WHY NUMBERS NOW?

Some people are surprised by the relative lack of solid cost/benefit information about Sales & Operations Planning, specifically its top management component: Executive S&OP¹.

I'm not surprised, because the costs of implementing Executive S&OP are so relatively low. Since the costs are low, most companies don't do a cost/benefit analysis (CBA) prior to starting. Thus, following implementation, there is little reason to calculate their performance improvements; there is no CBA against which to compare them.

The result: a relative lack of information on S&OP costs and benefits. Frankly, I wasn't too concerned about this, because most companies with whom I came in contact just went ahead and implemented without jumping through the CBA hoop.

That's changing. Within the past year or so, I've noticed more questions and conversation along the lines of: "how much does it cost?" "what do we get back for that money?" "what's the payback period?" and so forth. This paper attempts to answer those kinds of questions.

THE BEST PRACTICES PROJECT

Some years ago, I initiated a project to study the experiences of companies using Executive S&OP very well. We studied 13 companies, an admittedly non-random sample; these were organizations well known to my colleagues and me, and we were certain that they were operating the process effectively. This project resulted in a book titled *Sales & Operations Planning: Best Practices* written by John Dougherty and Chris Gray; this book contains a great deal of information on this topic, should you wish to get into more detail than this paper can provide

We obtained data on benefits the companies received. For some kinds of benefits, almost all 13 companies responded: customer service, inventory levels, and productivity. These are shown below. Other benefits –examples being improved new product launch, shorter lead times, reduced obsolescence – were cited by fewer companies and thus are not included here.

¹ As opposed to "Operational S&OP," which includes processes for dealing with individual items such as SKU-level forecasting, master scheduling, plant and supplier scheduling, kanban, and so forth, as opposed to the aggregate planning done in Executive S&OP.

A LOOK AT THE COMPANIES

The companies participating in the study are shown below. All numbers are approximate and represent conditions as of 2004/5. The last company shown, Unicorn, is a fictitious name, disguised at the company's request.

<u>COMPANIES/LOC'N</u>	<u>PRODUCTS</u>	<u>APPROXIMATE ANNUAL SALES</u>	<u>APPROXIMATE # EMPLOYEES</u>
AGFA – U.S.	film and equipment	\$1.4B	1,000
Amcor – Australia	packaging	\$50M	220
Cast-Fab – U.S.	castings/fabrications	\$37M	265
Coca-Cola France	soft drinks/juice	N/A	220
Danfoss – Denmark	compressors	\$230M	1,100
Eclipse – U.S.	industrial equipment	\$90M	500
Eli Lilly – U.S.	pharmaceuticals	\$12B	43,000
EMS – U.S.	clad metals	\$100M	400
Interbake Foods ² – U.S.	cookies/crackers	\$340M	1,700
PYOSA S.A. – Mexico	pigments/dyes	\$35M	300
Scotts – U.S.	lawn/garden products	\$2B	4,000
Unicorn ³ – U.S.	medical devices/supplies	7 50M	4,000

Disclaimer #1: The numbers below were not collected in a statistically rigorous manner, nor was it verified. If a company said: "We improved our customer delivery performance by 22%, we did not question that. We recorded 22%.

Disclaimer #2: In this era of Six Sigma, Lean Manufacturing, ERP, and more, it's often difficult for a company to identify which portion of an increase in customer service, for example, came from which initiative. What many companies do say is that all of these tools contributed to the benefits. We accepted that also.

Disclaimer #3: The analysis that follows is based on only these 13 organizations all of whom are successful with the process. Thus it cannot be considered as definitive, only directional. The numbers represent the approximate financial benefits you will receive, not if you implement Executive S&OP but if you implement it *successfully*.

That said, let's take a look at the "hard" benefits, the ones that can be readily quantified.

² Includes a subsidiary, Norse Dairy Systems, a manufacturer of production equipment for cookies and crackers.

THE BENEFITS

HARD BENEFITS

	<u>Percent Change</u>	
	<u>Range</u>	<u>Median</u>
ON TIME DELIVERY TO CUSTOMERS	+10-40%	25%
INVENTORY LEVELS	-12-70%	41%
MANUFACTURING DOWNTIME	-20-50%	35%
PLANT EFFICIENCY	+ 2-33%	17%
TRANSPORTATION COSTS	- 5-30%	17%

These are benefits reported by a high percentage of the respondents; it excludes other benefits that were cited by fewer.

SOFT BENEFITS

These are the ones that are difficult or impossible to quantify. They can be very significant and this is another reason for the lack of CBA data cited above, as in “Why do a cost/benefit study when many of the big benefits can’t be given a dollar amount?”

Many of the companies in the Best Practice study will point out that the soft benefits are equal in importance, or perhaps greater, than the hard benefits.

Enhanced Teamwork

Embedded Communications

Better Decisions

Better Financial Plans

More Focused Accountability

Greater Control

A Window Into The Future

Let’s take a look at each one.

Enhanced Teamwork. Executive S&OP (the process, not the term) was “invented” in the late 1970’s at Abbott Laboratories, U. S. Pharmaceutical Division. At the time, they called it “Game Planning.” The president of that division said that the process enabled his staff to “view the business through my glasses.” In other words, the VP

of Marketing could clearly see the situation on the Operations side of the business. Ditto for the Ops VP and his or her view of the problems in Marketing and Sales. Ditto also for the VPs of Finance and New Product Development.

Seeing “the other guy’s side of the story” and working together to solve problems builds teamwork, and this occurs at the top management , middle management, and others. I tell people that if they’ve implemented Executive S&OP and teamwork hasn’t visibly improved, they didn’t implement it well. It’s that simple.

Embedded Communications. No longer does Fred need to remember to tell Betty that the new product launch will be delayed by six weeks so that she can modify her earnings projections for the corporate office and Wall Street. These kinds of communications are embedded within the Five-Step Monthly S&OP cycle, and thus one can be assured that they’ll be made.

Better Decisions And Better Financial Plans. Some people wonder how Executive S&OP can enable to superior decision-making and financial planning with less effort. Well, there’s an analogy here with Six Sigma. As a company becomes more and more proficient with Six Sigma, what happens to product quality? It goes up. What happens to product cost? It goes down.

How can that be? It’s simple: better processes yield better results. And Executive S&OP is the same; it’s a better process for decision-making and it results in better decisions.

More Focused Accountability And Greater Control. Executive S&OP puts a spotlight on accountability. Comparing actual results to plan – sales compared to the forecast, production to the production plan, ending inventories to the inventory plan – is an inherent part of the monthly process. This of course results in a higher degree of accountability and causes some people to refer to Executive S&OP as “top management’s handle on the business.”

A Window Into The Future. It’s uncanny, but with Executive S&OP, people can see potential problems farther into the future than they could before. Early in an implementation, it’s not unusual to hear this comment: “Wow, look at that! If we weren’t doing S&OP, we would have got slammed about four months from now.” It’s usually possible to see potential problems early enough to take action, and thereby prevent them from turning into real problems.

COSTS TO IMPLEMENT⁴

So now it's time for the bad news: how much does a company have to shell out in advance to make this stuff work?

My answer: it depends. It depends on how much you want to pay. Want to spend seven figures? You can do that and be successful. Want to spend next to nothing out of pocket? You can do that and also be successful. Take your pick – it's up to you.

Let's first look at the various kinds of costs. Using a "golden oldie" classification, I break the major elements down into three categories: the ABC's of implementation. Derived from Pareto's Law, it addresses the relevant importance of each category as follows:

C = COMPUTER (mainly software)

B = DATA (spreadsheets, graphs, feeds, etc.)

A = PEOPLE (the "mind-set" issue: knowledge, willingness to change)

In an ABC inventory ranking, the C items are essential but they are of less overall importance than the A's and the B's. So it is with this ABC classification: they're all essential, but some are more significant than others and deserve more attention.

C – SOFTWARE. So how much do you want to spend for software – a half million dollars or more? You can do that and be successful. Or you can spend nothing. Nada. Zero. You can do that and be successful.

A high percentage of successful S&OP-using companies use spreadsheet software, such as Excel™ or similar. This percentage is declining, because over the recent past we've seen the onset of a number of superb S&OP-specific software packages and today more companies start off by using one of these packages.

Others prefer to get started with Excel, and some companies stay with it for the long run. Some companies switch to an S&OP-specific package after they're successfully operating the process; they want to get additional capabilities not available in a spreadsheet package and also to make the monthly cycle easier to execute.

For more on this, you might check *Sales & Operations Planning: The How-To Handbook, 3rd Edition* by Tom Wallace and Bob Stahl, Appendix C. You may have a copy of that book in your company, but if not go to www.tfwallace.com/bookstore.

⁴ These include only out-of-pocket costs and not the imputed costs of the people's time, which in most organizations will be quite low.

B – DATA. Included here are:

- gaining the capability to load into S&OP the relevant data from the ERP system, the CRM system, the legacy system, and so on
- acquiring missing data that's needed for Executive S&OP, often in the area of *extrinsic* market performance data to enhance the forecasting process
- insuring that the data to be used is valid and will support decision-making at the highest levels in the organization
- developing methods to display the Executive S&OP information: graphs, spreadsheets, charts, dashboards, and so forth

This work is frequently done in house, by a mix of people from IT and from operating departments, and hence carries no out-of-pocket costs. However, some of it can be contracted out to outside consultants, with of course a certain level of expenditure.

A – PEOPLE. Your success with Executive S&OP will depend largely on how well you do here. The mind set of your people – up to and including the leader of the business – is the key to success. It figures doesn't it, since the process deals with decision-making which of course is done by people.

Regarding costs, the people category breaks out primarily into two elements: education and training⁵, and outside consulting support.

Regarding the first, your people will need to learn:

- What is this Sales & Operations Planning and Executive S&OP stuff all about?
- Have any companies like ours made it work?
- If we do this, what will we look like a year from now?
- WIIFM (not an FM radio station but an acronym for “what's in it for me?”)

Who should receive this education? Primarily those who will be hands on with Executive S&OP up to and including the leader of the business. In a company of average size, that's not a large number of people – perhaps two to four dozen. So it's not like Six Sigma, Lean Manufacturing or ERP, which call for many people throughout the entire enterprise to get input.

⁵ I prefer the term *education* rather than *training*. Training frequently gets involved with how to run the software. Education, in this context, focuses on how to run the business with this new process for decision-making.

So, how much should you spend for education? First, let's take zero off the table. Not educating your people will result in failure and failure is not what I'm talking about.

Broadly, you can educate your people inside the company or outside:

- If outside, your education will come from outsiders, which will cost money, and your people will have to travel to the teachers. This is the most expensive option, and can easily run into the \$50,000+ range. Few companies pursue the outside option for all their people, but rather may send one or several of their people outside with the balance of the people getting their input at inside sessions.
- If inside, you have another decision to make – you can decide to use an outside S&OP Expert and bring him or her into the company. The average size company will typically spend between \$5,000 and \$15,000 for an outsider to teach one or several inside sessions.

Or you can equip one of your own people to become the S&OP Expert and lead the internal education sessions. In that case, the primary costs would involve getting this person down the learning curve, one part of which could be an outside class that he or she would attend (about \$2,500).

Alternatively, video-based education can be very effective and costs roughly half of that⁶. An S&OP Expert is also required for this approach to work well. Video also has the advantage of being available to the people throughout the entire implementation and afterwards, as a tool for reference and refresher, and also for new people coming on board.

Another inside option is to use books only. Give each person a copy of a book and tell them to read it. Unless your company is truly exceptional, that probably won't be enough to enable the kinds of behavior change necessary. Books are an important supplement to the sessions we've been discussing, but on a stand-alone basis are rarely sufficient to enable success. Figure on \$500 to \$1,000 for books for an average company.

⁶ The only resource that I'm aware of to perform this function is *The Education Kit for Sales & Operations Planning*, which I created and produced recently. Go to www.tfwallace.com/educationkit.

SAMPLE COST BENEFIT ANALYSIS – LOW COST PATH

This sample shows a CBA for a medium-size company with about \$500 million in annual sales. It takes the median numbers in the hard benefits section on page x of this document, from the Best Practices study.

SAMPLE BUSINESS: ACME WIDGET COMPANY

ANNUAL SALES	\$500 MILLION
COST OF GOODS SOLD	300
VARIABLE MANUFACTURING COSTS	50
ANNUAL TRANSPORTATION COSTS	25
FINISHED GOODS INVENTORIES	100

<u>HARD BENEFITS</u>	<u>RANGE</u>	<u>MEDIAN</u>	<u>ANNUAL \$\$\$ BENEFIT</u>
ON TIME DELIVERY TO CUSTOMERS	+10-40%	25%	
Benefit translation:			
number of orders per year	250,000		
number of backorders per year	50,000		
cost per backorder	\$200		
total backorder cost	\$10M		
benefit from 25% cut in backorders			\$2.5 MILLION
INVENTORY LEVELS	-12-70%	41%	
Benefit translation:			
41% drop in the \$100MM inv: \$41MM			
15% carrying cost decrease on \$41MM:			\$8.2 MILLION
PLANT EFFICIENCY	+ 2-33%	17%	
Benefit translation: 17% reduction on \$50MM			\$8.5 MILLION
TRANSPORTATION COSTS	- 5-30%	17%	
Benefit translation 17% reduction to \$25 M			\$4.2 MILLION
TOTAL HARD BENEFITS			\$23.4 MILLION

SOFT BENEFITS

SALES GAIN FROM BETTER CUSTOMER SERVICE

ENHANCED TEAMWORK

IMPROVED COMMUNICATIONS

BETTER DECISIONS

BETTER FINANCIAL PLANS

MORE FOCUSED ACCOUNTABILITY

GREATER CONTROL

WINDOW INTO THE FUTURE

TOTAL SOFT BENEFITS

PRICELESS

TOTAL QUANTIFIABLE BENEFITS

\$23.4 MILLION

COSTS (out of pocket only)

SOFTWARE

\$0

DATA

\$0

PEOPLE

EDUCATION

\$5,000

COACHING/CONSULTING

\$40,000

TOTAL COSTS

\$45,000

NET BENEFITS (1st full year of operation)

\$23,355,000

**COST OF A ONE-MONTH DELAY
(Net Benefits/12)**

\$1,945,000

SAMPLE COST BENEFIT ANALYSIS – HIGH COST PATH

Let's change the situation a bit. Let's say that the Acme people want to get S&OP-specific software because they feel it will give them:

- a better process right from the start due to better and faster simulation capabilities and a tighter integration of financials and operating data
- an easier, less labor intensive data download each month from their ERP system, their CRM system, and various legacy systems that are still around. (Some companies refer to their monthly S&OP cycle as "blood, sweat, and Excel.")

Further, Acme people are in a period of heavier than normal workload. Acme just acquired a company with a complementary product line and for the next year they'll be heavily involved with integrating the new business into theirs.

They feel their choices are either to defer Executive S&OP for a year – or to implement now using outside resources for much of the education, systems work, and other related issues. They chose the latter alternative and that means they'll be relying on outside consulting support for much of the work. Here's how their CBA would look:

BENEFITS

TOTAL QUANTIFIABLE BENEFITS	\$23,400,000
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COSTS (out of pocket only)

SOFTWARE	\$500,000
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DATA (consulting costs shown below)	\$0
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PEOPLE

EDUCATION	\$5,000⁷
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COACHING/CONSULTING	\$400,000
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TOTAL COSTS	<u>\$905,000</u>
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NET BENEFITS (1 st full year of operation)	\$22,495,000
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COST OF A ONE-MONTH DELAY	\$1,874,583
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⁷ Assumes attendance at outside classes for two people, with the balance being educated on Executive S&OP at in-house sessions given led by the consultants.

THE SKEPTICAL VIEW

I've tried to make these numbers realistic and, when in doubt, I chose more conservative numbers. However, for the skeptical reader, I suggest you cut the benefit amounts in half and double the costs, as follows:

THE LOW-COST CBA

TOTAL QUANTIFIABLE BENEFITS HALVED	\$11,700,000
TOTAL COSTS DOUBLED	\$90,000
TOTAL REDUCED NET BENEFITS	\$11,610,000
COST OF A ONE-MONTH DELAY (Net Benefits/12)	\$967,500

THE HIGH-COST CBA

TOTAL HARD BENEFITS HALVED	\$11,700,000
TOTAL COSTS DOUBLED	\$1,810,000
TOTAL REDUCED NET BENEFITS	\$9,890,000
COST OF A ONE-MONTH DELAY (Net Benefits/12)	\$824,000

CONCLUSION

As I said earlier, this paper cannot be considered as definitive, only directional because of the non-random sample employed. However, speaking as one who has seen S&OP work so very well in so many different companies, I feel confident that the costs and benefits shown here are very attainable by almost all companies. Executive S&OP is a low risk, high payback venture. And this, of course, is one of the reasons why the process is becoming so widely adapted.

I'd like to issue a call to my friends in academia. This topic cries out for more research because Sales & Operations Planning is here to stay; it's become part of the managerial landscape. Might this topic be appropriate for a doctoral dissertation?

I hope this white paper proves helpful to you in getting started with Executive S&OP. I would very much appreciate your feedback.

Tom Wallace
September 30, 2009

ABOUT THE AUTHOR

Tom Wallace is a teacher and writer, specializing in Sales & Operations Planning. He is a distinguished fellow of the Ohio State University's Center for Operational Excellence, and currently writes and speaks in conjunction with the Institute of Business Forecasting. He's taught in Australia, Belgium, Canada, China, France, Great Britain, Mexico, New Zealand and the United States.

Tom has written twelve books, including *Sales & Operations Planning: the How-To Handbook*, 3rd Edition (2007), *Sales & Operations Planning: the Executive's Guide* (2006), and *Sales & Operations Planning: the Self-Audit Workbook* (2005). Tom has also produced a number of educational videos, most recently *The Education Kit for Sales & Operations Planning* (2009), a multi-media teaching resource for delivering S&OP education.

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The logo consists of a horizontal line with a small upward-pointing chevron or triangle centered beneath it.